

National Aeronautics and
Space Administration
Goddard Space Flight Center
Greenbelt, MD 20771



AUG 22 2001

Reply to Attn of: 460

TO: NASA Headquarters
Attn: S/Associate Administrator for Space Sciences

FROM: 100/Director

SUBJECT: Mission Readiness Review (MRR) for Thermosphere
Ionosphere Mesosphere Energetics Dynamics (TIMED)

The MRR for the TIMED mission was held at the Goddard Space Flight Center on August 7, 2001. The science objectives and the current status of the instruments, spacecraft, ground system, and the launch vehicle were reviewed, and their readiness for launch was assessed by the Goddard Program Management Council, chaired by the Deputy Director. Additionally, the results of both the spacecraft and launch vehicle red team evaluations were presented.

The TIMED mission is co-manifested with the Code Y Jason-1 spacecraft, and they are to be launched on a Delta-2. This is a Dual Payload Attach Fitting mission similar to EO-1/SAC-C.

A rigorous program of internal and external reviews was used to assess the readiness of the TIMED Mission for launch. The standard technical review process has been followed, beginning with the Preliminary Design Review that was held in February 1997.

A spacecraft red team, chaired by William Taylor, was chartered by Goddard, and joined the TIMED effort in October 2000. A Failure Modes and Effects Analysis was performed on the spacecraft and the instruments very late in the development phase. Later, a fault tree analysis was performed within the Probabilistic Risk Assessment that was done by Aerospace Corporation. The probability of meeting full mission success is 67 percent and for meeting minimum mission success, it is 97 percent. These values include the launch vehicle. Failure of an instrument during the operations phase is the major driver in meeting the success criteria.

A parallel, but coordinated red team, chaired by Joseph Neiberding, conducted a separate review of the Delta-2 launch services for TIMED. Both the spacecraft and launch services review teams concluded that TIMED is ready to proceed to launch and on-orbit operations, pending completion of remaining work.

During the MRR, six action items were generated, but only one impacts launch, and that is in the process of being closed (enclosure 1). Also, because of the many launch delays, the contract modification with Johns Hopkins University/Applied Physics Laboratory has not been implemented. All parties are in agreement for the Mission Operations and Data Analysis effort, and a proposal was received from Johns Hopkins University/Applied Physics Laboratory on August 10, 2001. The planned contract negotiations are planned for September 12, 2001.

The Mission Readiness Briefing to the Associate Administrator for Space Sciences was held at Headquarters on August 9, 2001. TIMED was given a go to proceed to launch at that review.

It should be noted that the Center Director's Launch Vehicle Review at the John F. Kennedy Space Center was not conducted prior to the MRR and Mission Readiness Briefing. That meeting had originally been scheduled for August 15, 2001, but has been postponed because of problems with the Jason-1 spacecraft that will result in a launch delay.

To accommodate the Jason-1 rework, the Headquarters Flight Planning Board on August 13, 2001, has manifested the Jason/TIMED launch for December 7, 2001.

The Goddard Program Management Council believes that all residual risk issues identified to be greater than minimum risk have been well mitigated, and considers meeting the full science criteria to be a medium risk, and meeting the minimum science criteria to be a low risk (enclosure 2).

In conclusion, I have determined that the TIMED project is ready for launch assuming the successful completion of the final pre-launch preparations and countdown, and therefore recommend that you authorize the project to proceed accordingly.

ORIGINAL SIGNED BY
A. V. DIAZ

A. V. Diaz

2 Enclosures